

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: Christine D. Krempf et al.

Serial No.: 09/887,469

Group Art Unit: 1642

Filing Date: June 22, 2001

Examiner: Not yet Assigned

For: RESPIRATORY SYNCYTIAL VIRUS VACCINES EXPRESSING
PROTECTIVE ANTIGENS FROM PROMOTER-PROXIMAL GENES



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Assistant Commissioner for Patents
Washington, DC 20231

ASSOCIATE POWER OF ATTORNEY

Sir:

The undersigned attorney of record, pursuant to the provisions of 37 C.F.R. §§ 1.33 and 1.34, and M.P.E.P. §402.02, hereby appoints the registrants of Woodcock Washburn LLP, One Liberty Place, 46th Floor, Philadelphia, Pennsylvania 19103, telephone (215) 568-3100, as its agents and attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith.

Done on this 11 day of MARCH, 2002, at Rockville, Maryland.

UNITED STATES DEPARTMENT OF
HEALTH AND HUMAN SERVICES

By: Jack Spiegel

Printed Name: JACK SPIEGEL

Registration No.: 34470

for: Dr. Jack Spiegel, Director DTDT
Office of Technology Transfer
National Institutes of Health
6011 Executive Boulevard, Suite 325
Rockville, MD 20852
Telephone (301) 496-7056
Facsimile (301) 402-0220

DHHS CASE NO. E-225-00/1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Christine D. Krempf et al.

Serial No.: 09/887,469

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**For: RESPIRATORY SYNCYTIAL VIRUS VACCINES EXPRESSING
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DATE OF DEPOSIT: 4/12/2002

I HEREBY CERTIFY THAT THIS PAPER IS BEING
DEPOSITED WITH THE UNITED STATES POSTAL
SERVICE AS FIRST CLASS MAIL, POSTAGE PREPAID
ON THE DATE INDICATED ABOVE AND IS
ADDRESSED TO THE BOX DSD, COMMISSIONER FOR
PATENTS AND TRADEMARKS, WASHINGTON, DC,
20231.

TYPED NAME: Jeffrey J. King
REGISTRATION NO. 38,515

BOX DSD
Commissioner for Patents
Washington, DC 20231

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**ESTABLISHMENT OF RIGHT OF ASSIGNEE TO TAKE ACTION
AND
REVOCATION AND POWER OF ATTORNEY**

Dear Sir:

The undersigned is empowered to act on behalf of the assignee below (the "Assignee"). The original assignment and Agreement have been submitted for recordation. A copy of each submission is attached. This Assignment and Agreement represent the entire chain of title of this invention from the Inventor(s) Christine D. Krempf; Peter L. Collins; Brian R. Murphy; Ursula Buchholz and Stephen S. Whitehead to the Assignee.

I declare that all statements made herein are true, and that all statements made upon information and belief are believed to be true, and further, that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that willful, false statements may jeopardize the validity of the application, or any patent issuing thereon.

The undersigned hereby revokes any previous powers of attorney in the subject application, and hereby appoints the below listed registrants of National Institutes of Health Offices of Technology Transfer, 6011 Executive Boulevard, Suite 325, Rockville, MD 20852, telephone (301) 496-7056, as its agents and attorneys with full power of substitution and revocation to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith. This appointment is to be to the exclusion of the inventor(s) and his/her/their attorney(s) in accordance with the provisions of 37 C.F.R. § 3.71.

<u>James C. Haight</u>	Reg. No. <u>25,588</u>
<u>David R. Sadowski</u>	Reg. No. <u>32,808</u>
<u>Jack Spiegel</u>	Reg. No. <u>34,477</u>
<u>Susan S. Rucker</u>	Reg. No. <u>35,762</u>
<u>Stephen Finley</u>	Reg. No. <u>36,357</u>
<u>Steven Ferguson</u>	Reg. No. <u>38,488</u>
<u>John Peter Kim</u>	Reg. No. <u>38,514</u>
<u>Norbert Pontzer</u>	Reg. No. <u>40,777</u>
<u>Richard U. Rodriguez</u>	Reg. No. <u>45,980</u>
<u>Marlene Shinn</u>	Reg. No. <u>46,005</u>
<u>Dale Berkley</u>	Reg. No. <u>32,319</u>
<u>Catherine M. Joyce</u>	Reg. No. <u>40,668</u>

The National Institutes of Health Office of Technology Transfer has been duly delegated responsibility for such patent matters under the authority of the Department of Health and Human Services Secretary Louis W. Sullivan's May 21, 1991, memorandum appearing in the Friday, June 7, 1991, Federal Register Notices at Vol. 56, No. 110, pp. 26418-26419. The undersigned is authorized to exercise such authority in this matter.

Done on this 11 day of MARCH, 2002, at Rockville, Maryland.

UNITED STATES DEPARTMENT OF
HEALTH AND HUMAN SERVICES

By: Jack Spiegel
Printed Name: JACK SPIEGEL

Registration No.: 34,477

for: Dr. Jack Spiegel, Director, DTDT
Office of Technology Transfer
National Institutes of Health
6011 Executive Boulevard, Suite 325
Rockville, MD 20852
Telephone (301) 496-7056
Facsimile (301) 402-0220

DHHS CASE NO. E-225-00/1

**RECORDATION FORM COVER SHEET
PATENTS ONLY**

To The Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Ursula Buchholz September 6, 2000
First Assignor Date of Execution

Second Assignor Date of Execution

Third Assignor Date of Execution

Fourth Assignor Date of Execution

Fifth Assignor Date of Execution

Sixth Assignor Date of Execution

Additional name(s) of conveying party(ies) attached? () YES (X) NO

2. Name and address of receiving party(ies):

Name: The Government of the United States of America as represented by the Secretary of the Department of Health and Human Services

Street Address: 6011 Executive Blvd., Suite 325

City: Rockville

State MD ZIP 20852

Additional name(s) & address attached? () YES (X) NO

3. Nature of Conveyance (check only one):

- () New Assignment () Merger
(X) Agreement () Security Agreement
() Change of Name () Other

() Cross-reference of Assignment filed in United States Application No. ____/____/____, recorded on Reel No. ____ and Frame No. ____

4. Identification of Application number(s), patent number(s) OR date of execution of application to which assignment refers:

Application Nos.:

09/887,469

Patent Nos.:

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APR 26 2002

Date application was signed by the first named executing inventor

(Fill-in this date only if assignment is filed together with a new application)

5. Name and address of party to whom correspondence concerning documents should be mailed:

Name: Jeffrey J. King
WOODCOCK WASHBURN LLP
One Liberty Place - 46th Floor
Philadelphia, Pennsylvania 19103-7301
215-568-3100

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41):.....\$40.00

- () Enclosed
(X) Authorized to be charged to Deposit Account Number 23-3050

8. Please charge any deficiency or credit any overpayment to Deposit Account Number 23-3050

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Jeffrey J. King/Reg. No.38,515

Name of Person Signing/Reg. No.

Signature

Date 3/1/02

Total number of pages including cover sheet, assignment document and additional pages attached thereto: 7

Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231

CONFIDENTIAL

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PUBLIC HEALTH SERVICE

AGREEMENT

This Agreement is entered into by and between Ursula Buchholz, Ph.D. ("Dr. Buchholz"), having an address at Boddenblick 10, D-17498 Insel Riems, Germany, and the United States Public Health Service (hereinafter referred to as "PHS"), as represented by the Office of Technology Transfer, National Institutes of Health, having an address at 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852-3804, U.S.A..

1. BACKGROUND

- 1.1 In the course of fundamental research programs at the PHS and at the Federal Research Centre for Virus Diseases of Animals in Germany, Dr. Buchholz, Christine D. Kreml, Peter L. Collins, Brian R. Murphy and Stephen S. Whitehead (Inventor(s)) made or reduced to practice certain inventions which are included within the Patent Rights, as defined in Paragraph 2.1 below. Christine D. Kreml, Peter L. Collins, Brian R. Murphy and Stephen S. Whitehead are obligated to assign their rights in the Patent Rights to the United States Government. Dr. Buchholz owns her own undivided interest in the Patent Rights.
- 1.2 It is the mutual desire of Dr. Buchholz and the PHS that their respective undivided interests in said Patent Rights be administered in a manner to ensure the rapid commercialization of the Patent Rights and to make their benefits widely available to the public. Therefore, Dr. Buchholz is granting an exclusive license under Dr. Buchholz's rights in the Patent Rights to the PHS under the conditions set forth herein.

2. DEFINITIONS

2.1 "Patent Rights" means:

- a) Patent applications (including provisional patent applications and PCT patent applications) and/or patents as follows: U.S. Patent Application Serial No./U.S. Provisional Patent Application Serial No. 60/213,708, filed June 23, 2000, entitled "Respiratory Syncytial Virus Vaccines Expressing Protective Antigens from Promoter-Proximal Genes", and any patent application(s) claiming the benefit of priority thereof including all divisions and continuations of these applications, all patents issuing from such applications, divisions, and continuations, and any reissues, reexaminations, and extensions of all such patents to the extent that Dr. Buchholz is an Inventor thereon;
- b) to the extent that the following contain one or more claims directed to the invention or inventions disclosed in a) above and to the extent that Dr. Buchholz is an Inventor: i) continuations-in-part of a) above; ii) all divisions and continuations of these continuations-in-part; iii) all patents issuing from such continuations-in-part, divisions, and continuations; iv) priority patent application(s) of a) above; and v) any reissues, reexaminations, and extensions of all such patents;
- c) to the extent that the following contain one or more claims directed to the invention or inventions disclosed in a) above and to the extent that Dr. Buchholz is an Inventor: all counterpart foreign and U.S. patent applications and patents to a) and b) above.

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Patent Rights shall *not* include b) or c) above to the extent that they contain one or more claims directed to new matter which is not the subject matter disclosed in a) above.

- 2.2 "Net Revenues" means any and all consideration received by PHS from the licensing of said Patent Rights pursuant to this Agreement, less fifteen percent (15%) of such consideration for administrative overhead, such administrative overhead shall not exceed Ten Thousand Dollars in total. In the event that a license is executed by PHS with a third party wherein said Patent Rights are licensed together with other technologies not falling under the definition of Patent Rights above, "any and all consideration received by PHS from the licensing of said Patent Rights pursuant to this Agreement" through such third-party executed license shall correspond to said Patent Rights' percentage contribution to the total amount received for all licensed technologies as determined by PHS.
- 2.3 "Expenses" means all reasonable and actual out-of-pocket costs incurred by PHS for the preparation, filing, prosecution, and licensing of United States and foreign patent applications, extraordinary expenses as provided in Paragraph 4.6, and the maintenance of resulting patents, exclusive of any salaries, administrative, or other indirect costs.
- 2.4 "Recoverable Costs" means One Hundred Percent (100%) of Expenses incurred by the PHS from its management of Patent Rights pursuant to this Agreement, excluding costs reimbursed by third parties.

3. GRANT AND RESERVATION OF RIGHTS

- 3.1 Dr. Buchholz hereby grants and PHS accepts, subject to the terms and conditions of this Agreement, an exclusive license including the right to sublicense, under the Patent Rights to make and have made, to use and have used, to sell and have sold, to offer to sell, and to import any tangible embodiment of the Patent Rights and to practice and have practiced any process(es) included within the Patent Rights.
- 3.2 The Government of the United States shall have the irrevocable, royalty-free right worldwide to practice and have practiced the Patent Rights for or on behalf of the United States and on behalf of any foreign government or international organization under any existing or future treaty or agreement with the United States.

4. PATENT PROSECUTION AND PROTECTION

- 4.1 PHS shall file, prosecute, and maintain patent application(s) pertaining to Patent Rights and shall promptly provide to Dr. Buchholz all serial numbers and filing dates, together with copies of all such applications, including copies of all Patent Office actions, responses, and all other Patent Office communications. In addition, Dr. Buchholz, may, at her request, be represented by patent counsel who will be granted Power of Attorney for all such patent applications. PHS shall consult with Dr. Buchholz, when so requested, prior to communicating with any Patent Office with respect to the Patent Rights.
- 4.2 PHS shall make an election with respect to foreign filing, upon consultation with Dr. Buchholz. If any foreign patent applications are filed, PHS shall promptly provide to Dr. Buchholz all serial numbers and filing dates. PHS also shall provide to Dr. Buchholz copies of foreign patent applications and Patent Office actions. PHS shall consult with Dr. Buchholz, when so requested, prior to communication with any Patent Office with respect to the Patent Rights.
- 4.3 PHS shall promptly record Assignments of domestic patent rights in the United States Patent and

Trademark Office and shall promptly provide **Dr. Buchholz** with a photocopy of each recorded Assignment(s).

- 4.4 Notwithstanding any other provision of this **Agreement**, **PHS** shall not abandon the prosecution of any patent application including provisional patent applications (except for purposes of filing continuation application(s)) or the maintenance of any patent contemplated by this **Agreement** without prior written notice to **Dr. Buchholz**. Upon receiving such written notice, **Dr. Buchholz** may, at her sole option and expense, take over the prosecution of any such patent application, or the maintenance of any such patent.
- 4.5 **PHS** shall promptly provide to **Dr. Buchholz** copies of all issued patents under this **Agreement**.
- 4.6 In the event that **PHS** anticipates the possibility of any extraordinary expenditures arising from the preparation, filing, prosecution, licensing, or defense of any patent application or patent contemplated by this **Agreement**, including, without limitation, interferences, reexaminations, reissues and oppositions, **PHS** shall provide **Dr. Buchholz** with all relevant information and such extraordinary expenditures shall be included as **Expenses** only upon written agreement of **Dr. Buchholz**. **PHS** and **Dr. Buchholz** shall agree on a mutually acceptable course of action prior to incurring such expenditures.

5. LICENSING

- 5.1 **PHS** shall diligently seek licensee(s) for the commercial development of said **Patent Rights** and shall administer the **Patent Rights** for the mutual benefit of the parties and in the public interest.
- 5.2 **PHS** shall promptly provide to **Dr. Buchholz** copies of all licenses and sublicenses issued on **Patent Rights**.

6. ROYALTIES AND EXPENSES

- 6.1 **PHS** shall distribute **Net Revenues** to **Dr. Buchholz** concurrently with distributions it makes under **PHS's** patent policy on the following basis: a) twenty percent (20%) of the **Net Revenues** to **Dr. Buchholz** and b) eighty percent (80%) of the **Net Revenues** as a royalty to **PHS**. All payments to **Dr. Buchholz** required under this **Agreement** shall be in U.S. Dollars and shall be made by check or bank draft drawn on a United States bank and made payable to Ursula Buchholz. All such payments shall be sent to the following address: Boddenblick 10, D-17498 Insel Riems, Germany.
- 6.2 **PHS** shall submit to **Dr. Buchholz** annual statements of itemized **Expenses** and will deduct **Recoverable Costs** prior to the distribution of **Net Revenues** pursuant to Article 6.1 of this **Agreement**.
- 6.3 Each party shall be solely responsible for calculating and distributing to its respective **Inventor(s)** of the subject **Patent Rights** any share of **Net Revenues** in accordance with its respective patent policy, royalty policy, or Federal law during the term of this **Agreement**.

7. RECORDS AND REPORTS

- 7.1 **PHS** shall keep complete, true, and accurate accounts of all **Expenses** and of all **Net Revenues** received by it from each licensee of the **Patent Rights** and shall permit **Dr. Buchholz** or **Dr. Buchholz's** designated agent to examine its books and records in order to verify the payments due or owed under this **Agreement**.

- 7.2 Upon request by **Dr. Buchholz**, **PHS** shall submit to **Dr. Buchholz** a report setting forth the status of all patent prosecution, commercial development, and licensing activity relating to the **Patent Rights** for the preceding calendar year.

8. **PATENT INFRINGEMENT**

- 8.1 In the event **PHS** or **Dr. Buchholz**, including its licensees, shall learn of the substantial infringement of any patent subject to this **Agreement**, the party who learns of the infringement shall promptly notify the other party in writing and shall provide the other party with all available evidence of such infringement. **PHS** and its licensees, in cooperation with **Dr. Buchholz**, shall use their best efforts to eliminate such infringement without litigation. If the efforts of the parties are not successful in eliminating the infringement within ninety (90) days after the infringing party has been formally notified of the infringement by **PHS**, **PHS** shall have the right, after consulting with **Dr. Buchholz**, to commence suit on its own account. **Dr. Buchholz** may commence her own suit after consultation with **PHS**.
- 8.2 **PHS** may permit its licensees to bring suit on their own account, and **PHS** shall retain the right to join any licensee's suit.
- 8.3 **Dr. Buchholz** shall take no action to compel **PHS** either to initiate or to join in any suit for patent infringement. Should the **Government** be made a party to any such suit by motion or any other action of **Dr. Buchholz**, **Dr. Buchholz** shall reimburse the **Government** for any costs, expenses, or fees which the **Government** incurs as a result of such motion or other action, including any and all costs incurred by **PHS** in opposing any such joinder action.
- 8.4 Legal action or suits to eliminate infringement and/or recover damages pursuant to Paragraph 8.1 shall be at the full expense of the party by whom suit is brought. All damages recovered thereby shall first be used to reimburse each party for their expenses in connection with such legal action, and the remainder of such damages shall be considered **Net Revenues**.
- 8.5 Each party agrees to cooperate with the other in litigation proceedings. **PHS** may be represented at its expense by counsel of its choice in any suit.

9. **GOVERNING LAWS, SETTLING DISPUTES**

- 9.1 This **Agreement** shall be construed in accordance with U.S. Federal law, as interpreted and applied by the U.S. Federal courts in the District of Columbia. Federal law and regulations will preempt any conflicting or inconsistent provisions in this **Agreement**. **Dr. Buchholz** agrees to be subject to the jurisdiction of U.S. courts.
- 9.2 Any controversy or any disputed claim by either party against the other arising under or related to this **Agreement** shall be submitted jointly to **Dr. Buchholz** and to the Director of the National Institutes of Health (NIH) or designee for resolution. **Dr. Buchholz** and **PHS** will be free after written decisions are issued by those officials to pursue any and all administrative and/or judicial remedies which may be available.

10. **TERM AND TERMINATION**

- 10.1 This **Agreement** is effective when signed by all parties and shall extend to the expiration of the last to expire of the patents included within the **Patent Rights** unless otherwise terminated by operation of law or by acts of the parties in accordance with the terms of this **Agreement**.
- 10.2 **PHS** may terminate this **Agreement** upon at least sixty (60) days written notice to **Dr.**

Buchholz, but in any event not less than sixty (60) days prior to the date on which any pending Patent Office actions need be taken to preserve patent rights for the benefit of the parties hereto.

- 10.3 **Dr. Buchholz** may terminate this **Agreement** in whole or in part if: a) **PHS** fails to make payments or periodic reports required by this **Agreement**, after written notice from **Dr. Buchholz** and a ninety (90) day period for **PHS** to cure the failure b) **PHS** has committed a substantial breach of a covenant or duty contained in this **Agreement**; or c) **PHS** and **Dr. Buchholz** are involved in a dispute under this **Agreement** which cannot be resolved under the procedures specified in Paragraph 9.2. If the **Agreement** is terminated under this Section 10.3, **Dr. Buchholz** agrees to provide affected licensees an opportunity to license the **Patent Rights** under such terms as may have been agreed to by **PHS**.

11. GENERAL

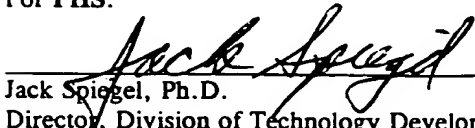
- 11.1 All notices required or permitted by this **Agreement** shall be given by prepaid, first class, registered or certified mail or by an express/overnight delivery service provided by a commercial carrier, properly addressed to the other Party at the address designated on the following Signature Page, or to such other address as may be designated in writing by such other Party. Notices shall be considered timely if such notices are received on or before the established deadline date or sent on or before the deadline date as verifiable by U.S. Postal Service postmark or dated receipt from a commercial carrier. Parties should request a legibly dated U.S. Postal Service postmark or obtain a dated receipt from a commercial carrier or the U.S. Postal Service. Private metered postmarks shall not be acceptable as proof of timely mailing.
- 11.2 The **Agreement** or anything related thereto shall not be construed to confer on any person any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of rights pursuant to this **Agreement** shall not be immunized from the operation of state or Federal law by reason of the source of the grant.
- 11.3 It is agreed that no waiver by either party hereto of any breach or default of any of the covenants or agreements herein set forth shall be deemed a waiver as to any subsequent and/or similar breach or default.
- 11.4 This **Agreement** is binding upon and shall inure to the benefit of the parties hereto, their successors or assigns, but this **Agreement** may not be assigned by either party without the prior written consent of the other party.
- 11.5 This **Agreement** confers no license or rights by implication, estoppel, or otherwise under any patent applications or patents of **PHS** other than **Patent Rights** regardless of whether such patents are dominant or subordinate to **Patent Rights**.
- 11.6 Any modification to this **Agreement** must be in writing and agreed to by both parties.
- 11.7 It is understood and agreed by **Dr. Buchholz** and **PHS** that this **Agreement** constitutes the entire agreement, both written and oral, between the parties, and that all prior agreements respecting the subject matter hereof, either written or oral, expressed or implied, shall be abrogated, canceled, and are null and void and of no effect.

PHS AGREEMENT

SIGNATURE PAGE

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in duplicate originals by their respective duly authorized officers hereunto, on the day and year hereinafter written. Any communication or notice to be given shall be forwarded to the respective addresses listed below.

For PHS:



Jack Spiegel, Ph.D.
Director, Division of Technology Development and Transfer
Office of Technology Transfer
National Institutes of Health

9/25/2000
Date

Mailing Address for Notices:

Office of Technology Transfer
National Institutes of Health
6011 Executive Boulevard, Suite 325
Rockville, Maryland 20852-3804 U.S.A.

For Dr. Buchholz (Upon information and belief, the undersigned expressly certifies or affirms that the contents of any statements of Dr. Buchholz made or referred to in this Agreement are truthful and accurate.)
by:



Ursula Buchholz, Ph.D.

09/06/00
Date

Official and Mailing Address for Notices:

Ursula Buchholz, Ph.D.
Boddenblick 10
D-17498
Insel Reims
Germany

Any false or misleading statements made, presented, or submitted to the Government, including any relevant omissions, under this Agreement and during the course of negotiation of this Agreement are subject to all applicable civil and criminal statutes including Federal statutes 31 U.S.C. §§ 3801-3812 (civil liability) and 18 U.S.C. § 1001 (criminal liability including fine(s) and/or imprisonment).

RECORDATION FORM COVER SHEET PATENTS ONLY																									
To The Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.																									
1. Name of conveying party(ies): <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black; width: 60%;">Christine D. Krempf</td> <td style="border-bottom: 1px solid black; width: 40%;">November 28, 2001</td> </tr> <tr> <td>First Assignor</td> <td>Date of Execution</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Peter L. Collins</td> <td style="border-bottom: 1px solid black;">November 28, 2001</td> </tr> <tr> <td>Second Assignor</td> <td>Date of Execution</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Brian R. Murphy</td> <td style="border-bottom: 1px solid black;">November 28, 2001</td> </tr> <tr> <td>Third Assignor</td> <td>Date of Execution</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Stephen S. Whitehead</td> <td style="border-bottom: 1px solid black;">November 28, 2001</td> </tr> <tr> <td>Fourth Assignor</td> <td>Date of Execution</td> </tr> <tr> <td style="border-bottom: 1px solid black;"> </td> <td style="border-bottom: 1px solid black;"> </td> </tr> <tr> <td>Fifth Assignor</td> <td>Date of Execution</td> </tr> <tr> <td style="border-bottom: 1px solid black;"> </td> <td style="border-bottom: 1px solid black;"> </td> </tr> <tr> <td>Sixth Assignor</td> <td>Date of Execution</td> </tr> </table> <p>Additional name(s) of conveying party(ies) attached? () YES (X) NO</p>	Christine D. Krempf	November 28, 2001	First Assignor	Date of Execution	Peter L. Collins	November 28, 2001	Second Assignor	Date of Execution	Brian R. Murphy	November 28, 2001	Third Assignor	Date of Execution	Stephen S. Whitehead	November 28, 2001	Fourth Assignor	Date of Execution			Fifth Assignor	Date of Execution			Sixth Assignor	Date of Execution	2. Name and address of receiving party(ies): Name: The Government of the United States of America as represented by the Secretary of the Department of Health and Human Services Street Address: 6011 Executive Blvd., Suite 325 City: Rockville State MD ZIP 20852 Additional name(s) & address attached? () YES (X) NO
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3. Nature of Conveyance (check only one): <div style="display: flex; justify-content: space-between;"> (X) New Assignment () Merger </div> <div style="display: flex; justify-content: space-between;"> () License Agreement () Security Agreement </div> <div style="display: flex; justify-content: space-between;"> () Change of Name () Other: </div> () Cross-reference of Assignment filed in United States Application No. ____/____/____, recorded on ____ at Reel No. ____ and Frame No. ____																									
4. Identification of Application number(s), patent number(s) OR date of execution of application to which assignment refers: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; border-bottom: 1px solid black;">Application Nos.:</td> <td style="width: 33%; border-bottom: 1px solid black;">Patent Nos.:</td> <td style="width: 34%; border-bottom: 1px solid black;">Date application was signed by the first named executing inventor</td> </tr> <tr> <td style="border-bottom: 1px solid black;">09/887,469</td> <td style="border-bottom: 1px solid black;"> </td> <td style="border-bottom: 1px solid black;"> </td> </tr> </table> <p style="text-align: right; font-size: small;">(Fill-in this date only if assignment is filed together with a new application)</p>			Application Nos.:	Patent Nos.:	Date application was signed by the first named executing inventor	09/887,469																			
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09/887,469																									
5. Name and address of party to whom correspondence concerning documents should be mailed: Name: Jeffrey J. King WOODCOCK WASHBURN LLP One Liberty Place - 46th Floor Philadelphia, Pennsylvania 19103-7301 215-568-3100	6. Total number of applications and patents involved: 1 7. Total fee (37 CFR 3.41):.....\$40.00 () Enclosed (X) Authorized to be charged to Deposit Account Number 23-3050 8. Please charge any deficiency or credit any overpayment to Deposit Account Number 23-3050																								
DO NOT USE THIS SPACE																									
9. Statement and signature. <i>To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.</i> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; border-bottom: 1px solid black;">Jeffrey J. King/Reg. No.38,515</td> <td style="width: 30%; border-bottom: 1px solid black; text-align: center;"> </td> <td style="width: 30%; border-bottom: 1px solid black; text-align: center;"> 3/1/02 </td> </tr> <tr> <td>Name of Person Signing/Reg. No.</td> <td style="text-align: center;">Signature</td> <td style="text-align: center;">Date</td> </tr> </table> <p style="text-align: right;">Total number of pages including cover sheet, assignment document and additional pages attached thereto: 6 </p>			Jeffrey J. King/Reg. No.38,515		3/1/02	Name of Person Signing/Reg. No.	Signature	Date																	
Jeffrey J. King/Reg. No.38,515		3/1/02																							
Name of Person Signing/Reg. No.	Signature	Date																							
Mail documents to be recorded with required cover sheet information to: Commissioner of Patents and Trademarks Box Assignments Washington, D.C. 20231																									

Mail documents to be recorded with required cover sheet information to:

**Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231**

Attorney Docket No.: N00130
DHHS Reference No.: E-225-0011

ASSIGNMENT

WHEREAS, We, **Christine D. Krempf**, of 12512 Village Square Terrace, Apt. 102, Rockville, MD 20852, **Peter L. Collins**, of 12304 Village Square, Apt. 401, Rockville, MD 20852, **Brian R. Murphy**, of 5410 Tuscarawas Road, Bethesda, MD 20816, **Ursula Buchholz**, of Boddenblick 10, Insel Riems D-17498, Germany, and **Stephen S. Whitehead**, of 7 Prairie Rose Lane, Gaithersburg, MD 20878, hereinafter referred to as "Assignors," employees of the Department of Health and Human Services at the time the invention was made, have invented: **RESPIRATORY SYNCYTIAL VIRUS VACCINES EXPRESSING PROTECTIVE ANTIGENS FROM PROMOTER-PROXIMAL GENES**, for which an application to the Assistant Commissioner for Patents for grant of Letters Patents of the United States of America has been executed by the undersigned

☒ is identified as U.S. Patent Application:

Serial No.: 09/887,469

Filed: June 22, 2001; and

WHEREAS, the conditions under which said invention was made are such as to entitle the Government of the United States of America under Paragraph 1 (a) of Executive Order 10096, to the entire right, title, and interest herein, both domestic and foreign; and

WHEREAS, the Government of the United States of America is desirous of acquiring all domestic and foreign right, title, and interest in the aforesaid invention described in the aforesaid application for Letters Patent of the United States of America; and

NOW, THEREFORE, to all whom it may concern, be it known that for and in consideration of the premises and other valuable considerations, we the undersigned, have sold, assigned, and transferred and by these presents do sell, assign, and transfer unto The Government of the United States of America as represented by the Secretary of the Department of Health and Human Services (hereinafter **THE GOVERNMENT**), and his successors, the full and exclusive right, title, and interest throughout the United States of America, its territories and dependencies, and within each and every foreign country in which **THE GOVERNMENT** elects to file the invention described in the aforesaid application for Letters Patent of the United States of America, and all Letters Patents and Registrations which may be granted on the same in the United States of America and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Attorney Docket No.: N-0130
DHHS Reference No.: E-225-0011

AND, we hereby authorize and request the Assistant Commissioner for Patents to issue said Letters Patent to THE GOVERNMENT as assignee of the entire right, title, and interest in and to the same throughout the United States of America, its territories and dependencies, and within each and every foreign country in which THE GOVERNMENT elects to file, for the sole use for the full term or terms for which said Letters Patent and Registrations may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof which may be granted as fully and entirely as the same would have been held by us, had this assignment not been made;

AND, we hereby warrant that there are no outstanding assignments, grants, liens, encumbrances, or agreements either written, oral, or implied with respect to the aforesaid application for Letters Patent which will impair, diminish, limit, or abridge the interest herein conveyed at the time of the execution of this instrument by us;

AND, we hereby agree to execute any and all applications for Letters Patent in the United States of America and foreign countries, and to furnish and deliver to the Secretary, Department of Health and Human Services, upon request, all data and documents, and to execute any papers which may be necessary for the prosecution of any application or applications of Letters Patent or for THE GOVERNMENT to exercise its rights granted hereunder, including communicating to THE GOVERNMENT, its representatives or agents, any facts relating to said invention, including evidence for interference purposes, or for other proceedings, whenever requested, to testify in any interference or other proceedings, whenever requested, and to execute and deliver on request all lawful papers required to make any of the foregoing provisions effective, and likewise make these provisions binding upon our heirs, legal representatives, administrators and assigns, and we shall assist THE GOVERNMENT in every way as may be requested in protecting said invention, provided that any expense of extending such assistance shall be paid by THE GOVERNMENT.

The undersigned hereby grants THE GOVERNMENT or the law firm of Woodcock Washburn Kurtz Mackiewicz & Norris LLP, the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Attorney Docket No.: NE 0130
DHHS Reference No.: E-225-0011

Dated: 11/28/01

Christine D. Krempf
Christine D. Krempf

STATE OF Massachusetts)
COUNTRY OF Massachusetts)
UNITED STATES OF AMERICA

ss.

On Nov. 28, 2001, before me, MARGARET L. TOMCZAK (name of notary public), personally appeared Christine D. Krempf, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Margaret L. Tomczak
NOTARY PUBLIC
My Commission Expires: _____

MY COMMISSION EXPIRES
MARCH 1, 2003
MARGARET L. TOMCZAK
NOTARY PUBLIC

Attorney Docket No.: N-0130
DHHS Reference No.: E-225-0011

Dated: 11/28/01

RECEIVED
Peter L. Collins APR 17 2002
TECH CENTER 1600/2900

STATE OF Maryland)
COUNTRY OF MD)

SS.

RECEIVED

APR 26 2002

UNITED STATES OF AMERICA

TECH CENTER 1600/2900

On Nov 28, 2001, before me, MARGARET L. TOMCZAK (name of notary public), personally appeared Peter L. Collins, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Margaret L. Tomczak
NOTARY PUBLIC
My Commission Expires: _____

MY COMMISSION EXPIRES
MARCH 1, 2003
MARGARET L. TOMCZAK
NOTARY PUBLIC

Attorney Docket No.: N-0130
DHHS Reference No.: E-225-0011

RECEIVED

APR 26 2002

TECH CENTER 1600/2900

Dated: 1/28/01

Brian R. Murphy
Brian R. Murphy

STATE OF Maryland)

COUNTRY OF)

ss.

UNITED STATES OF AMERICA

RECEIVED

APR 17 2002

TECH CENTER 1600/2900

On 1/28, 2001, before me, MARGARET L. TOMCZAK (name of notary public), personally appeared Brian R. Murphy, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

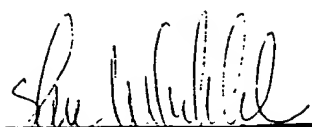
WITNESS my hand and official seal.

Margaret L. Tomczak
NOTARY PUBLIC

My Commission Expires:

MY COMMISSION EXPIRES
MARCH 1, 2003
MARGARET L. TOMCZAK
NOTARY PUBLIC

Attorney Docket No.: NT 0130
DHHS Reference No.: E-225-0011

Dated: 11/26/01
Stephen S. WhiteheadSTATE OF Maryland)
)
COUNTRY OF _____)

ss.

UNITED STATES OF AMERICA

On Nov. 23, 2001, before me, MARGARET L. TOMCZAK (name of notary public), personally appeared Stephen S. Whitehead, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.


NOTARY PUBLIC

My Commission Expires: _____

MY COMMISSION EXPIRES
MARCH 1, 2003
MARGARET L. TOMCZAK
NOTARY PUBLIC